Dr. Ryan J. Giordano

CONTACT
INFORMATION

1121 Colusa Ave.
Berkeley, CA, 94707
USA

✉ rgiordano@berkeley.edu
🌐 rgiordan.github.io
☎ (805) 501-6754

EDUCATION

University of California Berkeley, CA USA — 2013–2019
Ph.D., Statistics. Advisors: M. I. Jordan, J. McAuliffe, T. Broderick
Thesis: *On the Local Sensitivity of M-Estimation: Bayesian and Frequentist Applications*

London School of Economics, London, UK — 2006–2008
MSc., Econometrics.

University of Illinois Urbana-Champaign, IL, USA — 1997–2002
BA., Mathematics.
BS., Theoretical and Applied Mechanics.

PROFESSIONAL
EXPERIENCE

University of California Berkeley, CA USA — 2023–present
Assistant professor of statistics.

Massachusetts Institute of Technology, Cambridge, MA USA — 2019–2023
Department of EECS, Laboratory for Information & Decision Systems
Postdoctoral Research Fellow. Advisor: Tamara Broderick

Google Inc., Mountain View, CA USA — 2009–2013
Senior Engineer, Quantitative Analysis

Macquarie Group, London, UK — 2008
Risk Management Intern

United States Peace Corps, Kokshetau, KZ — 2004–2006
Education Volunteer, successful completion of service

Hewlett-Packard, Boise, ID — 2002–2004
Lifetest Coordinator and Reliability Engineer

HONORS AND
AWARDS

Selected for the Nov 5th 2021 Gary Chamberlain Online Seminar in Econometrics (2021)
Notable Paper Award, Artificial Intelligence and Statistics (AISTATS) (2019)
Travel Award, Artificial Intelligence and Statistics (AISTATS) (2019)
Travel Award, Bayesian Nonparametrics Conference (2019)
Student Paper Award, ASA Section on Bayesian Statistical Science (2018)
Travel Award, International Society for Bayesian Analysis (ISBA) (2018)
Berkeley Institute for Data Science Fellow (2017–19)
Junior Travel Support Grant, International Society for Bayesian Analysis (ISBA) Bayes Comp (2016)
Spotlight Paper, Neural Information Processing Systems (NeurIPS) (2015)
Outstanding Graduate Student Instructor Award (2015)
Travel Award, Neural Information Processing Systems Workshop on Variational Inference (2014)
Hertz Foundation Graduate Fellowship Finalist (2014)
Google Operating Committee Award (2010)
Advanced-high speaker of Russian in Peace Corps Aptitude Test (2006)
Advanced-mid speaker of Kazakh in Peace Corps Aptitude Test (2006)
Selected as a Peace Corps "Success Story" for a congressional report (2005)
Best Project, Undergraduate Mechanics Research Conference (2002)
Best Presentation, Undergraduate Mechanics Research Conference (2002)
Seely, Sinclair, Stippes, TAM Merit Scholarships (1998–2002)

PREPRINTS   **Giordano, R.**, Broderick, T., "The Bayesian Infinitesimal Jackknife for Variance". In: *arXiv preprint arXiv:2305.06466* (2023).

Giordano, R., Jordan, M. I., Broderick, T., "A higher-order swiss army infinitesimal jackknife". In: *arXiv preprint arXiv:1907.12116* (2019).

UNDER REVIEW   **Giordano, R.**, Ingram, M., Broderick, T., "Black Box Variational Inference with a Deterministic Objective: Faster, More Accurate, and Even More Black Box". In: *arXiv preprint arXiv:2304.05527* (2023).

Kasprzak, M., **Giordano, R.**, Broderick, T., "How good is your Gaussian approximation of the posterior? Finite-sample computable error bounds for a variety of useful divergences". In: *arXiv preprint arXiv:2209.14992* (2022).

Broderick, T., **Giordano, R.**, Meager, R., "An automatic finite-sample robustness metric: When can dropping a little data make a big difference?" In: *arXiv preprint arXiv:2011.14999* (2020). (Author order alphabetical; Giordano and Meager are joint lead authors.)

PUBLISHED   Berlinghieri, R., Trippe, B., Burt, D., **Giordano, R.**, Srinivasan, K., Özgökmen, T., Xia, J., Broderick, T., "Gaussian processes at the Helm(holtz): A more fluid model for ocean currents". In: *Proceedings of the 40th International Conference on Machine Learning.* Proceedings of Machine Learning Research. PMLR, 2023.

Giordano, R., Liu, R., Jordan, M. I., Broderick, T., "Evaluating Sensitivity to the Stick-Breaking Prior in Bayesian Nonparametrics (with Discussion)". In: *Bayesian Analysis* 18.1 (2023), pp. 287–366.

Giordano, R., Stephenson, W., Liu, R., Jordan, M. I., Broderick, T., "A Swiss Army Infinitesimal Jackknife". In: *The 22nd International Conference on Artificial Intelligence and Statistics.* 2019, pp. 1139–1147.

Giordano, R., Broderick, T., Jordan, M. I., "Covariances, Robustness, and Variational Bayes". In: *Journal of Machine Learning Research* 19.51 (2018), pp. 1–49. URL: http://jmlr.org/papers/v19/17-670.html.

Regier, J., Pamnany, K., Fischer, K., Noack, A., Lam, M., Revels, J., Howard, S., **Giordano, R.**, Schlegel, D., McAuliffe, J., "Cataloging the Visible Universe through Bayesian Inference at Petascale". In: *2018 IEEE International Parallel and Distributed Processing Symposium (IPDPS).* IEEE. 2018, pp. 44–53.

Giordano, R., Broderick, T., Jordan, M. I., "Linear response methods for accurate covariance estimates from mean field variational Bayes". In: *Advances in Neural Information Processing Systems.* 2015, pp. 1441–1449.

Winther, R., **Giordano, R.**, Edge, M., Nielsen, R., "The mind, the lab, and the field: Three kinds of populations in scientific practice". In: *Studies in History and Philosophy of Science Part C: Studies in History and Philosophy of Biological and Biomedical Sciences* 52 (2015), pp. 12–21.

INVITED TALKS   Flatiron institute Bayesian Reading Group   May 2023
Black Box Variational Inference with a Deterministic Objective

BayesComp 2023 (Robustness to Model Misspecification session)   March 2023
Frequentist Covariances of Posterior Expectations with the Bayesian Infinitesimal Jackknife

Stanford Statistics Seminar   July 2022
An Automatic Finite-Sample Robustness Metric: Can Dropping a Little Data Make a Big Difference?

NeurIPS 2021 Bayesian Deep Learning Workshop   December 2021
Frequentist Covariances of Posterior Expectations with the Bayesian Infinitesimal Jackknife

Johns Hopkins Bayesian Learning And Spatial Temporal (BLAST) working group   October 2021
Variational Methods for Latent Variable Problems

New England Statistical Society (NESS) annual meeting   October 2021
Frequentist Covariances of Posterior Expectations with the Bayesian Infinitesimal Jackknife

Joint Statistical Meetings (JSM)   August 2021
An Automatic Finite-Sample Robustness Metric: Can Dropping a Little Data Change Conclusions?

International Society for Bayesian Analysis Annual Meeting   June 2021
Frequentist Covariances of Posterior Expectations with the Bayesian Infinitesimal Jackknife

ISBA-BNP series webinar   May 2021
Assessing Sensitivity to the Stick-Breaking Prior in Bayesian Nonparametrics

Harvard Graduate School of Education Miratrix CARES lab   Feubrary 2021
An Automatic Finite-Sample Robustness Metric: Can Dropping a Little Data Change Conclusions?

Splunk Statistics Seminar Series   October 2019
A Higher-Order Swiss Army Infinitesimal Jackknife

Google Statistics Journal Club   September 2019
On the Local Sensitivity of M-estimation: Bayesian and Frequentist Applications

Perlmutter Research Group   June 2019
Variational Methods for Latent Variable Problems

Contributed Talks	BAYSM Bayesian Young Statisticians Meeting	Nov 2023

BAYSM Bayesian Young Statisticians Meeting   Nov 2023
Black Box Variational Inference with a Deterministic Objective

BAYSM Bayesian Young Statisticians Meeting   August 2021
Assessing Sensitivity to the Stick-Breaking Prior in Bayesian Nonparametrics

BAYSM Bayesian Young Statisticians Meeting   November 2020
Effortless Frequentist Covariances of Posterior Expectations in Stan

StanCon   July 2020
Effortless Frequentist Covariances of Posterior Expectations in Stan

Berkeley Statistics Student Seminar Series   April 2019
Sensitivity and Uncertainty in Variational Bayes with an Application to the EM Algorithm

12th International Conference on Bayesian Nonparametrics, Oxford, UK   June 2019
Evaluating Sensitivity to the Stick Breaking Prior in Bayesian Nonparametrics

Berkeley Institute for Data Science Lunchtime Seminar Series   October 2018
Sensitivity, Uncertainty, and Automatic Differentiation

Berkeley Institute for Data Science Lunchtime Seminar Series   July 2018
Bayesian Inference and Inverse Problems

StanCon   January 2018
Automatic Robustness Measures in Stan

Berkeley BSTARS Conference   March 2017

How Bad Could it Be? Worst-case Prior Sensitivity Estimates for Variational Bayes

Berkeley BSTARS Conference   March 2016
Measuring Robustness with Variational Bayes

Berkeley–Stanford Student Joint Colloquium   November 2014
Covariance Matrices for Mean Field Variational Bayes

Joint Statistical Meetings (JSM)   August 2013
Estimating Average Proportional Changes in Large, Sparse Data

PROFESSIONAL
SERVICE
Student Leadership

University of California, Berkeley, Statistics Department
- Diversity Taskforce Member   2018–2019
- Graduate Student Mentor   2017–2019
- Diversity Committee Member   2017
- Co-organizer of the Gender and Diversity Roundtable   2016–2018
- Student Seminar Committee Member   2014–2017

Universty of Illinois, Urbana-Champaign, Engineering Mechanics Department
- President, Student Society for Experimental Mechanics   2000–2002
- Organizer, Free University Opera for Engineering Students   2001–2002

Journal Reviewing
- Bayesian Analysis
- Journal of Machine Learning Research
- JRSS-B

Conference Reviewing
- Advances in Neural Information Processing Systems (NeurIPS)
- International Conference on Machine Learning (ICML)
- International Conference on Artificial Intelligence and Statistics (AISTATS)
- Advances in Approximate Inference (NeurIPS-adjacent workshop)
- I Can't Believe It's Not Better (NeurIPS workshop)

TEACHING
University of California, Berkeley, CA, USA
- Teaching Assistant, STAT215 Applied Statistics (Graduate-level)   Fall 2014

Prison University Project, San Quentin State Prison, CA, USA
- Volunteer math teacher   Fall 2015, Spring 2016, Fall 2017

Kokshetau Elementary School #3, Kokshetau, Akhmola, Kazakhstan
- Elementary school teacher of mathematics and English as a second language   2004–2006

University of Illinois, Urbana-Champaign, IL, USA
- Teaching Assistant, Mechanics of Materials Lab   Fall 1999
- Teaching Assistant, Introduction to Statics   Spring 1999